

Making Some Connections

- International Group on Earth Observations
- U.S. GEO
 - NTO Plan
 - 2007 Summit Deliverables
- EPA GEO Advanced Monitoring Initiative
 - FY06-07 Pilot Projects
 - FY08 Integration Objectives
- Cooperative Planning Opportunities

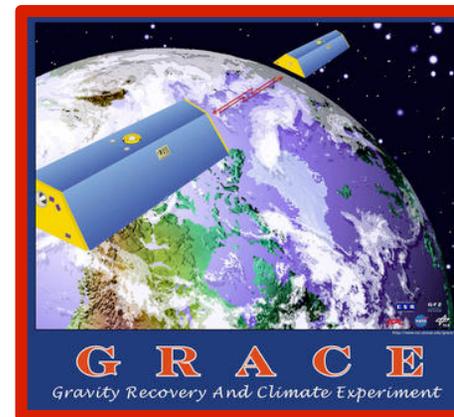
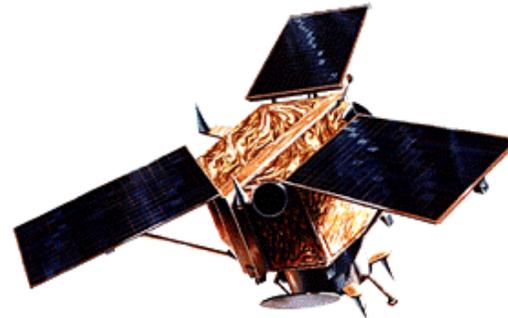


Group on
Earth Observations

GEO and GEOSS...

- **GEO is an Intergovernmental Organization**
 - 65 Nations
 - European Commission
 - 43 Participating Organizations

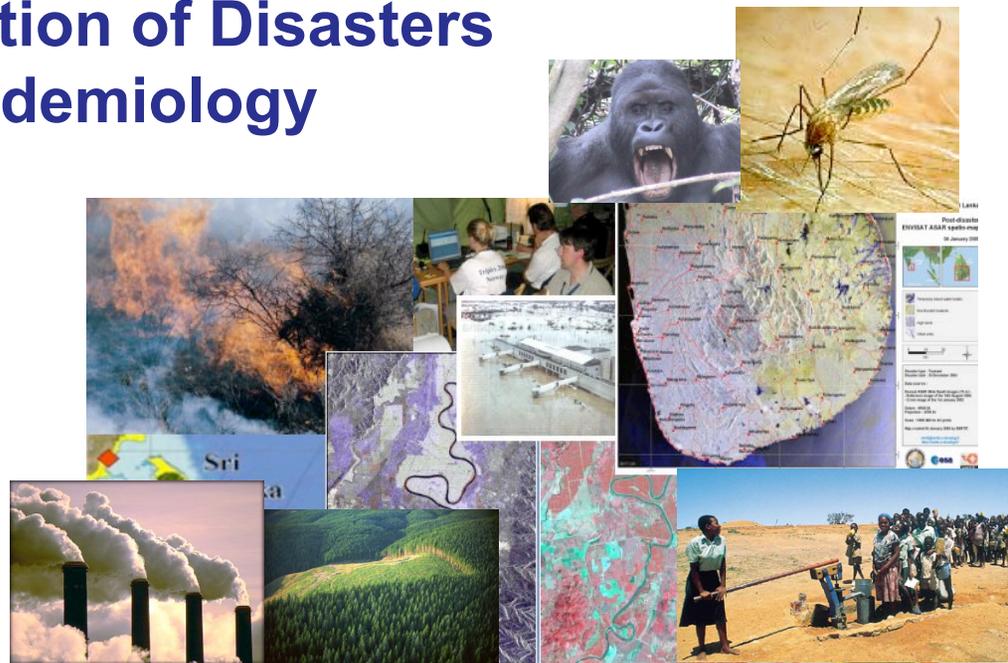
- **With a simple objective:**
To establish a global, coordinated, comprehensive and sustained system of Earth observing systems,
GEOSS



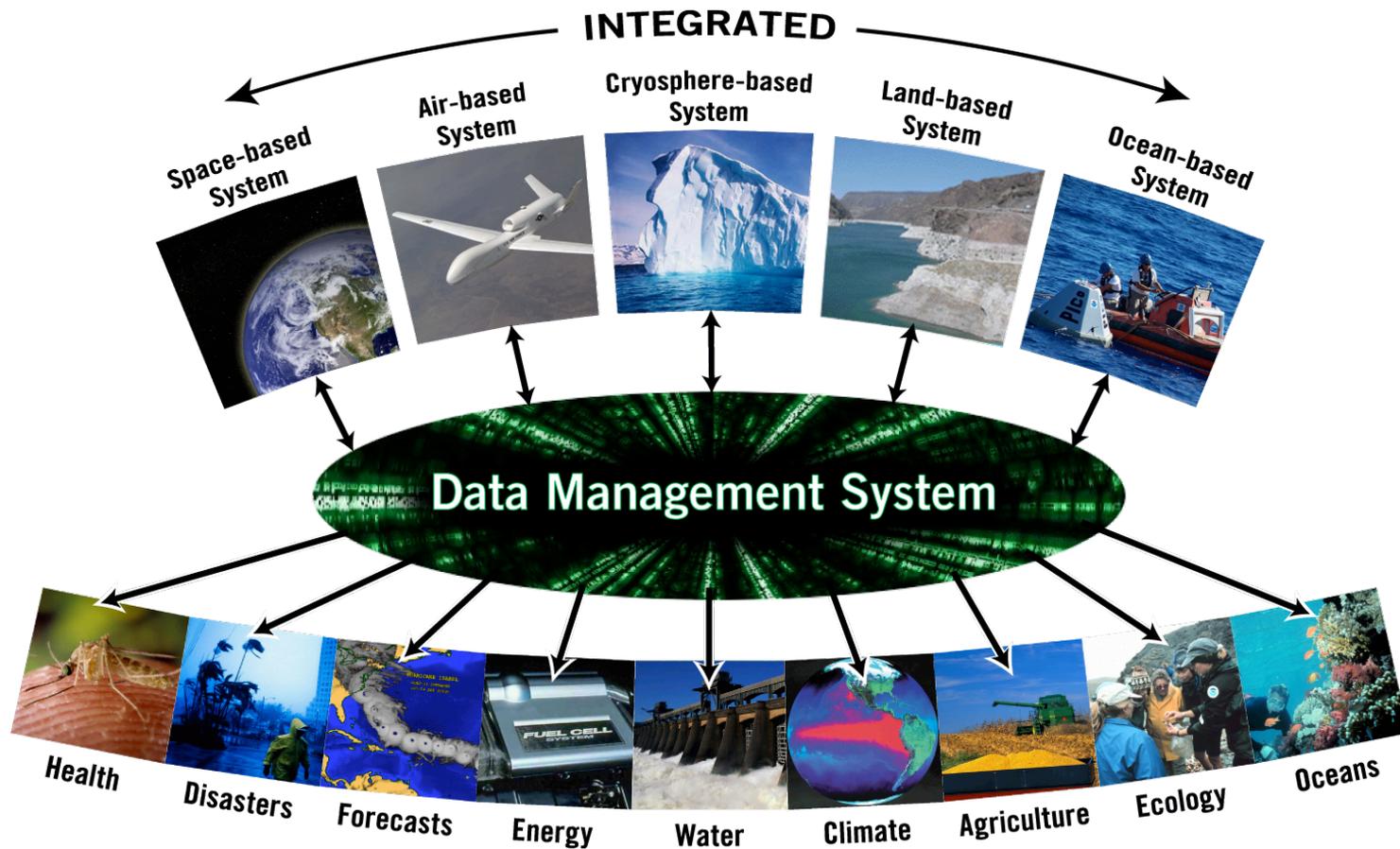
A Cross-cutting Approach

GEOSS will serve 9 Societal Benefit Areas

1. Reduction and Prevention of Disasters
2. Human Health and Epidemiology
3. Energy Management
4. Climate Change
5. Water Management
6. Weather Forecasting
7. Ecosystems
8. Agriculture
9. Biodiversity

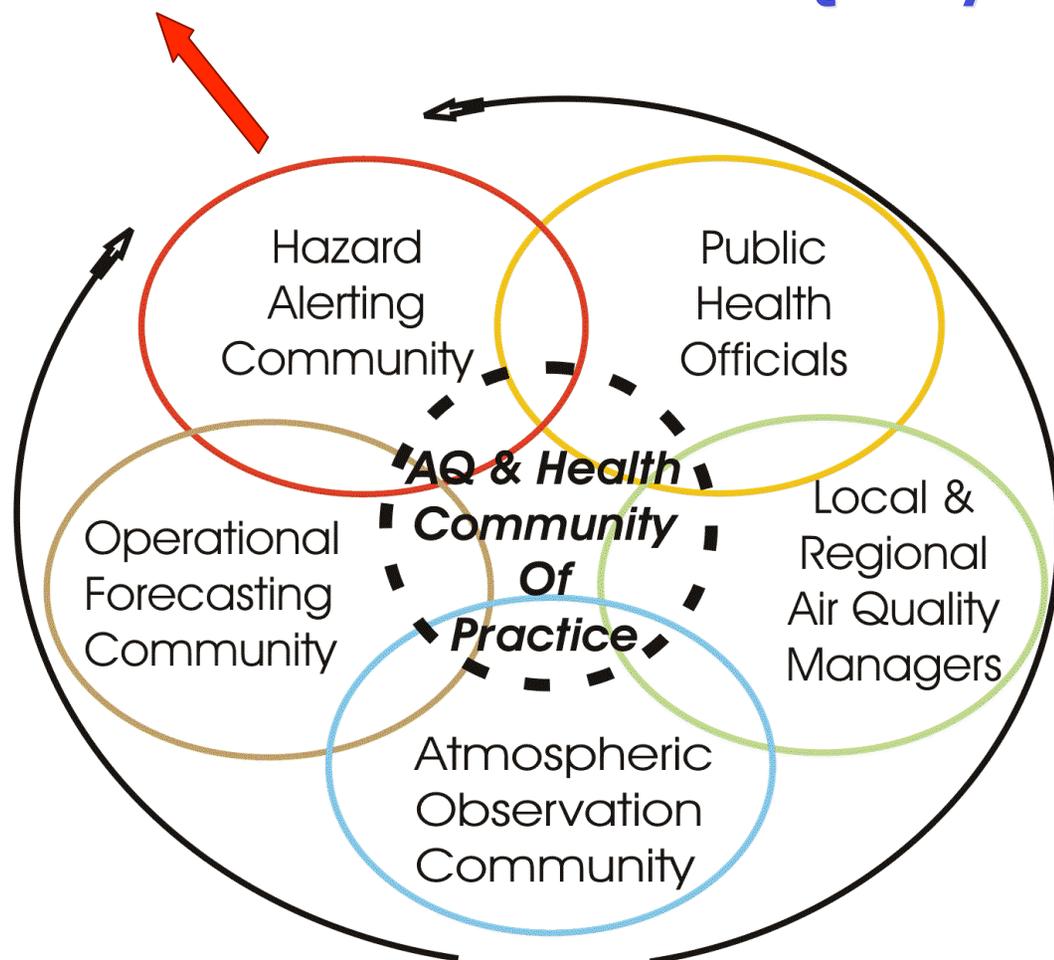


An Integrating Approach



The Public
Public Officials

Demonstration projects in the GEO 2006 Work Plan: Air Quality & Health Community of Practice



HE-06-02 Initiate pilot communities of practice to identify and further refine users' needs, in particular on cross-cutting areas, building upon the initial experience of community of practice and on information provided by national, regional and project-level surveys, e.g. Air and Health Community of Practice

Gary Foley, US EPA



GEO 2007-9 Workplan

HE-07-03: Integrated atmospheric pollution monitoring, modelling and forecasting

- Advocate a stable and improved in-situ and space-based observing system of global air quality in line with the Integrated Global Atmospheric Composition Observations (IGACO) recommendations. Support WMO efforts related to increased spatial and temporal resolution. As a priority, evaluate and recommend strategies for an integrated sampling frame for air pollution.
- Coordinate and facilitate appropriate activities and consortia that complement UNECE CLRTAP HTAP activities and pursue implementation of projects integrating Earth observation data on long range transport with other data, such as health and socio-economic data, to improve decision making.
- Support the development of international systems for both sand and dust storm warning and biomass burning monitoring.
- Coordinate the construction of a high spatial and temporal resolution monitoring and forecasting system including atmospheric, terrestrial and oceanic observations, modelling and chemical data assimilation for global and local air quality.
- Organise appropriate symposia in 2007.



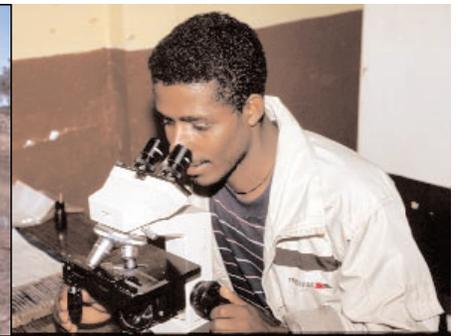
Health & Climate Partnership for Africa

- **WHO Multi Disease Surveillance Centre (MDSC), Burkina Faso (Overall Coordination and Health Component)**
- **International Research Institute for Climate and Society (IRI), USA (Partnership Facilitator)**
- **World Meteorological Organization (Meteorological Coordination)**
- World Health Organization
- International Federation of the Red Cross and Red Crescent Societies
- Centre de Recherche Médicale et Sanitaire (CERMES), Niger
- National Meteorological and Hydrological Services
- African Centre of Meteorological Applications for Development (ACMAD), Niger
- AGRHYMET Regional Centre, **Niger**
- European Centre for Medium-Range Weather Forecasts (ECMWF), UK
- Institut de Recherche Pour le Développement, France
- Liverpool School of Tropical Medicine, UK
- Météo France, France
- National Oceanic and Atmospheric Administration (NOAA), USA
- University of Liverpool, UK
- US Environmental Protection Agency



The Partnership Aims To:

- Strengthen the cooperation between health and meteorological services at both the national and international levels
 - To reduce the risk of epidemic diseases in the Sahel;
 - To improve routine rural and urban health care for weather- and climate sensitive diseases;
 - To increase capacity in the operational/research weather, climate and health communities to serve national development agendas through reduction in risk associated with weather- and climate-related health hazards.





Near Term Opportunity Plan: Air Quality Assessment and Forecasting

- **Integrated Observed-Modeled Air Quality Fields**
- **Systems for Utilizing Observations to Improve Air Quality Forecasts**
- **Assessments of Key Air Quality Processes**
- **Improved National Emissions Inventories**
- **Improved International Transport Assessments**

<http://usgeo.gov/>



Air Quality Assessment and Forecasting: Potential 2007 GEO Summit Deliverables

- **Surface Observations:**
 - International Version of AIRNow Data Management System
 - Shanghai Pilot Implementation
- **Satellite Observations:**
 - New Algorithms for AOD from Geostationary Satellites
 - Demonstration of IDEA/3dAQS Use of Satellite Observations for Forecasting

<http://usgeo.gov/>

EPA GEO: Advanced Monitoring Initiative

Selected FY06-07 Pilot Projects

- Modeling Integrated Spatial Data for Improved Public Information on Air Quality
- Use of Satellite data to evaluate PM 2.5 formation and transport in San Joaquin Valley, California
- Improving air accountability assessments: Fusing land based PM measurement networks with Satellite total column aerosol depth observations through characterizing lower troposphere vertical aerosol gradients with land based LIDAR.
- Ground-Level Ozone Concentrations Based on Satellite Observations and Ground Surface Monitoring Data in Support of Environmental Health Decisions U.S. - Mexico Border 2012 Program
- Advanced Accountability Metrics using Space-Based Observations of NO₂
- Estimation of Regional Total Sulfur and Nitrogen Loadings
- Pilot Project of an Integrated O₃ Observing System and Application to Lake Ontario O₃
- Improving Environmental Monitoring and Assessment of Air Pollution Over and From Central Asia by Integration of Observations with Models
- Delivering public health relevant air quality measures (implementing the PHASE toolkit) to improve local information for air quality and public health programs.
- Generating Accountability and Exposure Indicators Through Integration of Models, Measures and Methods
- Community of Practice for Advanced Air Monitoring and Public Health Data
- Proposal for an AIRNow Gateway System that will provide real-time data to the scientific, research, and educational communities to improve forecasting and public health protection
- Integration and Evaluation of Global Emissions Inventories in the NEISGEI Framework
- National Urban Morphological Database and Web Portal Access Tools for Advanced Urban Dispersion and Air Quality Modeling

EPA GEO: Advanced Monitoring Initiative

FY 08 Air Theme Plan:

- Develop a Best Practices Guide for GEOSS Air Quality Applications
- Standardize Key Tools or Data
- Develop and Demonstrate Data Access and Analysis Cases
 - Public Health and Accountability Indicators
 - Long Range Transport Model Evaluation
 - Fire and Smoke Management

Opportunities for Coordination

- Dialogue Begun Today
- Proposed June Meeting
NASA Applications, EPA AMI, and others
- Earth Science Information Partnership (ESIP)
Federation Meeting, 18-20 July
www.esipfed.org
- Possible NARSTO Workshop, Fall 2007
www.narsto.org
- CEOS Atmospheric Composition Constellation